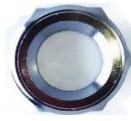

Flush Diaphragm Pressure Transmitter

Model : P510 Series(Ceramic Diaphragm)
P520 Series(Stainless steel)



Advantages

- Flush diaphragm with ceramic or stainless steel
- Shock and vibration resistant
- Zero and span adjustments
- Measuring ranges
 - P510 Series : 1 ~ 50 bar
 - P520 Series : 0.2 ~ 35 bar



P510 Series



P515 / P525



P516 / P526

Applications

The transmitters are specially designed for pressure measurement in sticky, high viscous liquids.

- Process control for food and beverage industry
- Tank level measurement
- Chemical and petrochemical industry
- Equipment and machinery for paint, ink, resin and dough process
- Cosmetic and pulp industry
- Pharmaceuticals



P520 Series



P517 / P527



P518 / P528

Descriptions

Flush mounted pressure transmitters are perfectly suitable for measuring static pressure in sticky and high viscous liquids in industrial applications. They incorporate a fully temperature compensated piezoresistive ceramic or silicon sensor which is corrosion resistant, and a strong, durable flush mounted diaphragm. The transmitters are available as absolute and relative pressure types with either 2-wire current or 3-wire voltage output. The versatile process connections including thread, flange and clamp mounting are available by customer requirement.

The pressure to be measured acts without transmitting liquid on a stable, corrosion resistant ceramic or silicon measuring cell. Piezoresistive resistors are attached to the cell and connected into a Wheatstone bridge configuration. The output signal of this bridge is converted into a standardized current or voltage output signal.

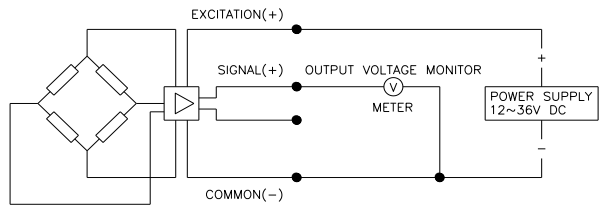
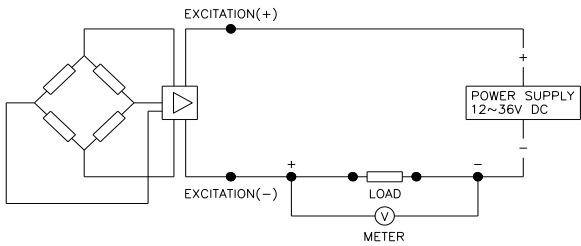
Specification

| Input | | |
|--------------------------------------|---|--|
| Model | P510 Series | P520 Series |
| Technology | Piezoresistive ceramic pressure sensor | Piezoresistive silicon pressure sensor |
| Pressure ranges | 1 to 50kgf/cm ² relative | 0~0.1 to 35kgf/cm ² relative |
| | 0~1 to 50kgf/cm ² absolute | 0~1 to 35kgf/cm ² absolute |
| Pressure reference | vacuum Gauge, absolute compound | |
| Overload | 1.5x full scale without damage | 3x full scale without damage |
| Output | | |
| Unamplified | 2.0~3.3 m V/V | 5.0 m V/V |
| Amplified | 4~20mA current (2-wire) | |
| | 1~5V voltage (3 or 4-wire) | |
| | Other signals available on request | |
| Electrical Specification | | |
| Excitation voltage | 24V DC(12~36V DC) | |
| Load resistance max @ 24V | 500Ω at 24V | |
| Influence of excitation | 0.01% FSO/V | |
| Power ripple | ≤500mV P-P | |
| Reverse polarity | Protected | |
| Shock resistance | ≤20g | ≤10g |
| Response time (10~90%) | 1.5 ms | ≤2 milliseconds |
| Adjustment | ±10% FSO/zero and span (Fixed value by default) | |
| Performance Specification | | |
| Accuracy | ≤ ±0.5% FSO | ≤ ±0.25% FSO |
| Linearity,Hysteresis & Repeatability | ±0.2~0.4% FSO typical | ±0.05% FSO typical |
| Stability | ±0.3% FSO/a@25°C | ±0.15% FSO/a@25°C |
| Cutoff frequency(-3 d B) | ≤2KHz | |
| Reference temperature | 25 °C | 25 °C |
| Operating temperature range | 0~60°C | -20~60°C |
| Storage temperature range | -20~70°C | -40~70°C |
| Thermal sensitivity shift | ≤ ± 0.3% FSO /°C typical | ≤±0.2% FSO /°C typical |
| Thermal zero shift | ≤ ± 0.3% FSO /°C typical | ≤±0.2% FSO /°C typical |
| Thermal hysteresis | ≤ ± 0.3% FSO /°C typical | ≤±0.1% FSO /°C typical |
| Physical Specification | | |
| Process connection | PF3/4 , male thread as a standard | |
| | Other connections available on request | |
| Process media | Gases and liquids compatible with | |
| Materials | Diaphragm : Stainless steel 316L | |
| | Housing (Body) : Stainless steel 304 | |
| | Process connection : Stainless steel 316 | |
| | Terminal head for P5x8 Model : Aluminium Die-casting (ALDC) | |
| | Gasket O-ring : Viton (HNBR, CSM, etc.) | |
| Enclosure rating | IP65 | |
| Influence of mounting position | Not critical | Under 0.5kgf/cm ² , mounting vertically |
| Weight | Approx. (157g) | |

- Note :
- ① Cable version : 1.5m standard length, 4-wire, shielded with integral vent tube
 - ② Vented gauge units must breathe dry, non - corrosive gases.
 - ③ Connector version is vented through the removed pin, cable versions are vented through a vent tube inside the cable sleeve

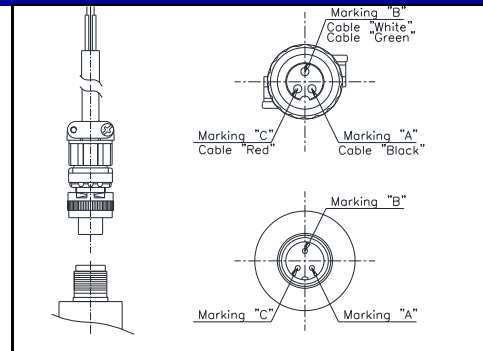
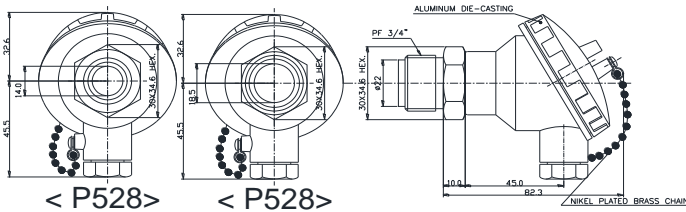
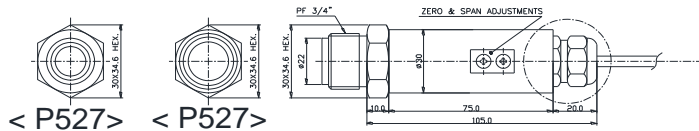
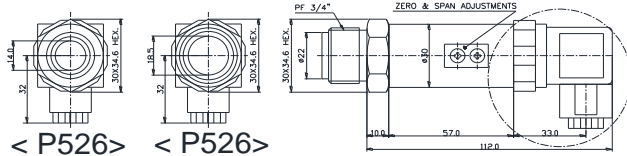
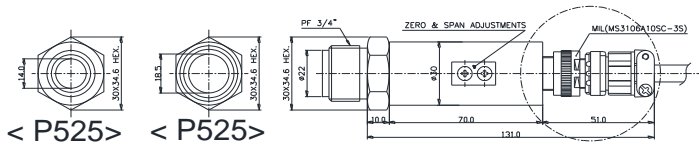
System connection for 2-wire transmitter

System connection for 3-wire transmitter

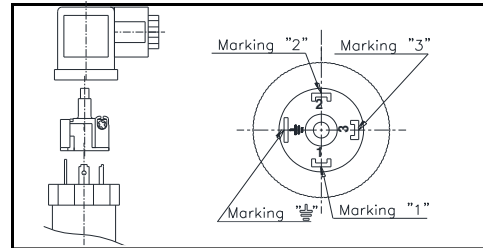


Dimension (mm)

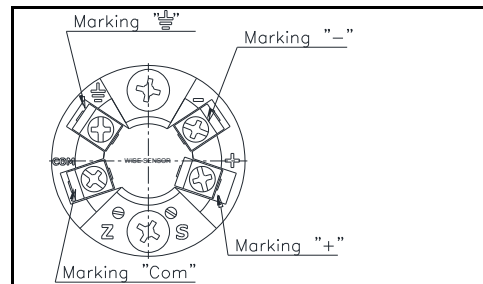
Electrical connection



< P5x5 Electrical connector >



< P5x6 Electrical connector >



< P5x8 Electrical connector >

• Wiring diagrams

E : Excitation
S : Signal
C : Common

| Conn. | System | Wire | | |
|------------------|--------|----------|----------|----------|
| | | 2 | 3 | 4 |
| P 5 x 5 | Red | E + | E + | E + |
| | Black | E - | C - | E - |
| | Green | | S + | S + |
| | White | | | S - |
| | GND | Shielded | Shielded | Shielded |
| P 5 x 6 | 1 | E + | E + | E + |
| | 3 | E - | C - | E - |
| | 4 | | S + | S + |
| | GND | Shielded | Shielded | S - |

| Conn. | System | Wire | | |
|------------------|--------|----------|----------|----------|
| | | 2 | 3 | 4 |
| P 5 x 7 | Red | E + | E + | E + |
| | Black | E - | C - | E - |
| | Green | | S + | S + |
| | White | | | S - |
| | GND | Shielded | Shielded | Shielded |
| P 5 x 8 | + | E + | E + | E + |
| | - | E - | C - | E - |
| | Com | | S + | S + |
| | GND | Shielded | Shielded | S - |

Ordering Information

Compact Pressure Transmitter

1. Base model

| | | | | | | | | | | | |
|------|--|--|--|--|--|--|--|--|--|---------------------------|--------------------|
| P515 | | | | | | | | | | Ceramic Diaphragm | Circular Connector |
| P525 | | | | | | | | | | Stainless Steel Diaphragm | |
| P516 | | | | | | | | | | Ceramic Diaphragm | DIN Connector |
| P526 | | | | | | | | | | Stainless Steel Diaphragm | |
| P517 | | | | | | | | | | Ceramic Diaphragm | Flying Lead |
| P527 | | | | | | | | | | Stainless Steel Diaphragm | |
| P518 | | | | | | | | | | Ceramic Diaphragm | General Head |
| P528 | | | | | | | | | | Stainless Steel Diaphragm | |

2. Pressure reference

| | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|-------------------|
| R | | | | | | | | | | Relative pressure |
| A | | | | | | | | | | Absolute pressure |

3. Process connection type "1"

| | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|---------------|
| M | | | | | | | | | | Male thread |
| F | | | | | | | | | | Female thread |

4. Process connection type "2"

| | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|
| T | | | | | | | | | | PT thread as standard |
| F | | | | | | | | | | PF thread |
| X | | | | | | | | | | Other process connections available on request |

5. Process connection size

| | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|----------------------------------|
| 1 | | | | | | | | | | 3/4 (standard) |
| 2 | | | | | | | | | | 1" |
| X | | | | | | | | | | Other units available on request |

6. Accuracy

| | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|----------------------------------|
| H | | | | | | | | | | ±0.25% F.S.O (with silicon cell) |
| S | | | | | | | | | | ±0.5% F.S.O (with ceramic cell) |

8. Measuring range

| | | | | | | | | | | |
|----|--|--|--|--|--|--|--|--|--|--|
| 01 | | | | | | | | | | 0 ~ 2000 mmH ₂ O (Only available P520 series) |
| 02 | | | | | | | | | | 0 ~ 3000 (Only available P520 series) |
| 03 | | | | | | | | | | 0 ~ 5000 |
| 04 | | | | | | | | | | 0 ~ 1 kg/cm ² bar |
| 05 | | | | | | | | | | 0 ~ 0.1 Mpa |
| 06 | | | | | | | | | | 0 ~ 0.2 Mpa |
| 07 | | | | | | | | | | 0 ~ 0.5 Mpa |
| 08 | | | | | | | | | | 0 ~ 2 Mpa |
| 09 | | | | | | | | | | 0 ~ 3.5 Mpa |
| 09 | | | | | | | | | | 0 ~ 50 (Only available P510 series) |
| 09 | | | | | | | | | | 0 ~ 5 Mpa (Only available P510 series) |
| xx | | | | | | | | | | Other calibration ranges available on request |

9. Unit

| | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|------------------------------------|
| M | | | | | | | | | | Calibration in mmH ₂ O |
| K | | | | | | | | | | Calibration in kgf/cm ² |
| A | | | | | | | | | | Calibration in Mpa |
| B | | | | | | | | | | Calibration in bar |
| P | | | | | | | | | | Calibration in psi |
| X | | | | | | | | | | Other units available on request |

10. Output signal / Electrical connection type

| | | | | | | | | | | |
|----|--|--|--|--|--|--|--|--|--|---|
| A1 | | | | | | | | | | 4~20mA, DC, 2-wire output |
| A2 | | | | | | | | | | 4~20mA, DC, 4-wire output |
| B1 | | | | | | | | | | 1~5V, DC, 3-wire output |
| B2 | | | | | | | | | | 0~5V, DC, 3-wire output (Only available P516, P526, P517 and P527) |
| B3 | | | | | | | | | | 0~10V, DC, 3-wire output (Only available P516, P526, P517 and P527) |

11. Option

| | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|
| N | | | | | | | | | | None options |
| X | | | | | | | | | | Other accessories available on request |

| | | | | | | | | | | |
|------|---|---|---|---|---|----|---|----|---|----------------------|
| P526 | R | M | F | 1 | S | 01 | K | A1 | N | Sample ordering code |
|------|---|---|---|---|---|----|---|----|---|----------------------|

Specifications subject to change without notice